

Northville Public Schools

Middle School Course Descriptions

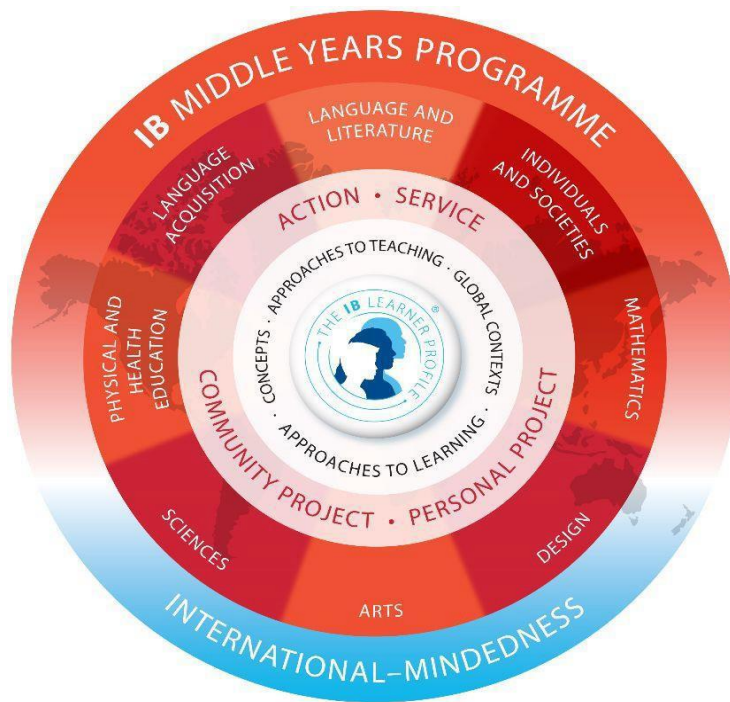
Hillside Middle School
Meads Mill Middle School
Grades 6, 7 & 8

2020-2021

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International Baccalaureate Middle Years Programme



Northville Public Schools is an accredited institution of the International Baccalaureate Middle Years Programme (IB MYP). The IB programme places a heavy emphasis on the education of the whole child. As a result, course offerings for middle school students are designed to provide a rich and rigorous experience for students in all eight of the IB MYP categories. Below is an overview of specific course descriptions by department and grade.

Courses in Language and Literature (English), Math, Individuals and Societies (Social Studies), Science, and Band will meet every day all year.

Courses in Arts (excluding Band), Design, Language Acquisition (French, German, Spanish, Mandarin) and Physical and Health Education will meet every other day all year.

IB Requirements	
A DAY	B DAY
Language and Literature	
Math	
Science	
Individuals and Societies	
Enrichment	
Language Acquisition	Physical and Health Education
Band/Design/PLTW differs per student	

ACADEMIC RESOURCE

Students are placed in Academic Resource by committee approval only and must maintain a minimum of 80% to remain eligible for this course. The course is offered in all three grade levels: 6th, 7th, and 8th.

Academic Resource is the middle school enrichment program for academically talented students. This full year course offers a humanities-based, problem-solving approach to learning. The purpose of the course is to allow academically talented students to experience an innovative and challenging curriculum. Each grade level is exposed to a variety of grade appropriate topics promoting inquiry and a deeper understanding of global themes. Emphasis is also placed on the unique social needs of academically talented students.

ENRICHMENT

Enrichment is a quarterly class for students that is an extension of core curriculum classes: Language and Literature, Math, Science and Individuals & Societies. These extension courses focus on building a deeper understanding of the content standards. Students create group projects as well as participate in an independent study.

THE ARTS

In MYP arts, students function as artists as well as learners of the arts. Artists have to be curious. By developing curiosity about themselves, others and the world, students become effective learners, inquirers and creative problem-solvers. Students create, perform and present arts in ways that engage and convey feelings, experiences and ideas. Through this practice, students acquire new skills and master those developed in prior learning [p4 - IB MYP Arts guide].

ORCHESTRA & BAND

Sixth Grade meets daily.

Orchestra 6

This is a yearlong performance-based class for students interested in Orchestra. Students may start on violin, viola, cello or double bass. A good quality instrument is essential for student success. Students need to obtain their own instrument for class/home use. Larger instruments will be available for school use, but should be obtained for home use (cello and double bass). The school will host a rental night in the fall at which time families may rent or purchase an instrument for their student. In order to maintain a balanced ensemble, final instrumentation may be at the discretion of the teacher. Through Orchestra, students learn about different cultures and play music from various eras. Students will also learn the care of the instrument, and the fundamentals of playing the instrument. Instruction is given in rhythmic reading with attention given to understanding of time signatures. Students learn musical terminology, key signatures, scales, and ensemble skills. They perform as soloists, and as an ensemble, and in both settings experience the necessary steps to achieve excellence. Students will incorporate a variety of technology that enhances their learning experience. They will also develop skills to enable them to be lifelong learners and lovers of music.

Students are required to practice roughly 1 ½ hours a week on their orchestral instrument.

Band 6

This is a yearlong performance-based class for students with no prior band experience. Students may start on flute, clarinet, trumpet, trombone, baritone, or percussion. *Previous piano experience is expected for percussion students.* A good quality instrument is essential for student success. Students need to obtain their own instrument for class/home use. The school will host a rental night in the fall at which time families may rent or purchase an instrument for their student. In order to maintain a balanced ensemble, final instrumentation may be at the discretion of the teacher. The band program is a sequential program that teaches students to play a band instrument through the intermediate level. Students are given instruction in the areas of performance, music literacy, listening, analysis, music technology, and music history. During this process, students learn to make connections between music of different cultures. Students will also learn the care of the instrument, and the fundamentals of playing the instrument. Instruction is given in rhythmic reading with attention given to understanding of time signatures. Students learn musical terminology, key signatures, scales, and ensemble skills. They perform as soloists, and as an ensemble, and in both settings

experience the necessary steps to achieve excellence. Students will incorporate a variety of technology that enhances their learning experience. They will also develop skills to enable them to be lifelong learners and lovers of music.

Students are required to practice roughly 1 ½ hours a week on their band instrument.

In grades 7 and 8, band students can take band daily; or, take band every other day if they would like to enroll in a PLTW class.

Band 7

This is a yearlong performance-based class for students with one year of band experience. Seventh graders without one year of band experience who wish to join are required to have one year of private lessons and audition with the band teacher prior to signing up for the class. The band program is a sequential program that teaches students to play a band instrument through the intermediate level. Students are given instruction in the areas of performance, music literacy, listening, analysis, music technology, and music history. During this process, students learn to make connections between music of different cultures. Students will also learn the care of the instrument, and the fundamentals of playing the instrument. Instruction is given in rhythmic reading with attention given to understanding of time signatures. Students learn musical terminology, key signatures, scales, and ensemble skills. They perform as soloists, and as an ensemble, and in both settings experience the necessary steps to achieve excellence. Students will incorporate a variety of technology that enhances their learning experience. They will also develop skills to enable them to be lifelong learners and lovers of music.

Students are required to practice roughly 1 ½ hours a week on their band instrument.

Band 8

This is a yearlong performance-based class for students with two years of band experience. Eighth graders without two years of band experience who wish to join are required to have two years of private lessons and audition with the band teacher prior to signing up for the class. The band program is a sequential program that teaches students to play a band instrument through the intermediate level. Students are given instruction in the areas of performance, music literacy, listening, analysis, music technology, and music history. During this process, students learn to make connections between music of different cultures. Students will also learn the care of the instrument, and the fundamentals of playing the instrument. Instruction is given in rhythmic reading with attention given to understanding of time signatures. Students learn musical terminology, key signatures, scales, and ensemble skills. They perform as soloists, and as an ensemble, and in both settings experience the necessary steps to achieve excellence. Students will incorporate a variety of technology that enhances their learning experience. They will also develop skills to enable them to be lifelong learners and lovers of music.

Students are required to practice roughly 1 ½ hours a week on their band instrument.

Chorus 6

Express yourself through music! In this class, students explore music through a variety of musical activities. These hands-on activities may include music games, class projects, fundamentals of proper singing, and music reading. Students will explore the overarching question, "How do we communicate?" through singing and performing for an audience. It is the goal of each choir to perform in one or more required concerts and may include a field trip. Students will wear appropriate concert attire.

Chorus 7

Be a music-maker! In this class, students explore music through a variety of musical activities. Chorus 7 students may expect to develop intermediate level skills of proper singing and music reading. Recalling material learned in Chorus 6, students will apply these skills while learning a broad range of musical styles. Respect for others will be instilled as music from many cultures will be studied. It is the goal of each choir to perform in two or more required concerts and may include a field trip. Students will wear appropriate concert attire.

Chorus 8

Take your singing to a higher level! This class will help students develop self-confidence in their vocal ability. Students will demonstrate understanding of music through the interpretation and application of vocal music technique and music reading. Students will apply these skills while learning a broad range of musical styles and music from other cultures in multiple languages. Students are encouraged to develop a lifelong love of the study of music. It is the goal of students in this chorus to perform in three or more concerts, and students may travel to off-site performances. Students will wear appropriate concert attire.

Performing Arts 8

Students are introduced to music, dance and drama. Students will study the history of the American Broadway Musical through intercultural understanding and the disposition and capacity to be lifelong learners. Students will also explore the History of Rock and Roll looking into 15 different genres of Rock Music from its creation to 2000. Students will gain respect for others and an appreciation of similarities and differences. Students will also participate in various performance activities such as Readers' Theater, scripts and monologues and develop appropriate attitudes in personal engagement. Students will perform individually as well as in groups throughout the class.

Art 6

Students will create two and three dimensional pieces of art in order to answer the question, "What is Art?" The Elements of Art and Principles of Design will be investigated as well as art history, aesthetics, and criticism. Students will improve their communication skills as well as learn to take risks. Students will have hands-on experience with drawing from their imaginations, seeing and drawing realistically, painting, ceramics, and other types of sculpture. Individual expression and creativity is expected.

Art 7

Students will answer the question "Where is art in my environment?" This art class allows students to discover the Elements of Art and Principles of Design through 2D and 3D artwork. Students will draw from their imaginations, draw realistically (right brain drawing), paint, work

with clay, and sculpt from other materials. As the students create and produce art works, they will address art history, criticism, and aesthetics. Thinking skills and keeping an open mind will also be encouraged.

Art 8

Students will explore a variety of 2D and 3D techniques and processes. Materials may include graphite, paint, paper, ink, found objects, clay, and others. How to make realistic drawings from two/three-dimensional sources will be studied in this class. This class will also offer a 'legacy project' which will be installed in the school building. By looking at and referencing the work of other artists, students will gain an appreciation of art history, art criticism and aesthetics. Through inquiry and reflection, students will answer the question, "What kind of artist am I?" This class will prepare students for high school art courses. Personal expression and creativity is encouraged!

INDIVIDUALS AND SOCIETIES (Social Studies)

MYP Individuals and Societies encourages learners to respect and understand the world around them and equips them with the necessary skills to inquire into historical, contemporary, geographical, political, social, economic, religious, technological and cultural factors that have an impact on individuals, societies and environments. It encourages learners, both students and teachers, to consider local and global contexts [p4 - IB MYP Individuals and Societies guide].

Individuals and Societies 6

Sixth grade Individuals and Societies focuses on the economy, geography, history and civics of the Western Hemisphere. The curriculum fosters a global perspective and student awareness of their role in a global community. Using a variety of media, students explore the topics of conflict, human environment interaction, and the importance of the individual in history. Learning is inquiry driven, as students strive to approach and respond in multiple ways to unit questions.

Individuals and Societies 7

The seventh grade Individuals and Societies curriculum introduces students to the geography, history and culture of Asia and Africa. Throughout our study, students will learn the locations of significant places in each of these world regions; explore cultural and natural features that characterize each region and trace the movement of people, ideas and products within the regions. Historical background is provided to enable students to understand how areas in Asia and Africa developed from the past to the present. Students will learn about early humans, their migration and settlement patterns and how the emergence of pastoral and agrarian societies set the stage for the development of powerful empires, a trade network and the diffusion of skills and ideas. World religions, their growth, spread and influence are studied. Contemporary differences in governments and economies are also examined. The economy of each region and its role in the global economy is explored with special attention paid to economic ties with the United States. Students will examine public issues of international significance and work to resolve them through study, collaboration, discussion and writing.

Individuals and Societies 8

This course is a chronological study of U.S. history from early North American colonization through the early 1900's. Study includes: Native Americans, early exploration, colonization, Revolutionary War, westward expansion, Civil War, reconstruction, and immigration. Students will cover the social studies concepts of introductory economics, political systems, and geography. In addition, the course will reinforce the academic skills of organization, note-taking, research using primary and secondary documents, and various reading strategies. The primary objective of the humanities course is to develop the understanding and application of concepts and skills using the U.S. History content.

LANGUAGE AND LITERATURE (English Language Arts)

Knowledge, conceptual understanding and skills will have been developed through transdisciplinary units of inquiry or independent language inquiry [p3 - IB MYP Language and Literature guide].

Language and Literature 6

Language and Literature 6 is a comprehensive reading, writing, speaking and listening program. A variety of activities are used to help students build an appreciation of global literature. Students will read and comprehend short stories, novels, and informational texts. Using strategies and problem-solving skills, they will also examine how these texts connect to the world around them and evaluate literature through a variety of lenses. Students will develop their understanding of correct grammar usage and spelling. Utilizing the writing process, they will write multiple pieces including a narrative story and a persuasive letter. In addition, students will conduct a research project. Students will learn how to analyze language for meaning. Through reflection and inquiry, students will understand that language is a vehicle for effective communication as well as a process that evokes ideas and guides learning.

Language and Literature 7

Language and Literature 7 is a comprehensive reading, writing, speaking and listening program. Various lessons, activities and experiences will be used to engage students to build upon their understanding and appreciation of a variety of literary genres. Students will read short stories, novels, plays and poetry and examine how these texts connect to the global community. Students will develop research skills and utilize the writing process to compose narrative, expository and persuasive writing pieces. In addition, students will develop their understanding of correct grammar usage and spelling.

Language and Literature 8

Language and Literature 8 is a comprehensive reading, writing, speaking, and listening program. A variety of activities are used to help students build an appreciation of literature. Students will read modern and classic short stories, novels, and student-selected independent reading texts, and examine how these texts connect to the world around them. Students will develop their understanding and usage of grammar through direct instruction, leading to meaningful application in writing assignments. They will compose a variety of pieces including responses to literature, expository four to five paragraph essays, comparative and

descriptive writing, and poetry. Additionally, students will learn to analyze language for meaning, and they will understand that language is a vehicle for effective communication as well as a process that evokes ideas and guides learning.

LANGUAGE ACQUISITION [French, German, Spanish & Mandarin]

MYP Language Acquisition builds on experiences in language learning that students have gained during their early years. Knowledge, conceptual understanding and skills are developed in the MYP through transdisciplinary units of inquiry or independent language inquiry. The six skill areas in MYP language— listening, speaking, reading, writing, viewing and presenting—are developed through the MYP years. Students wishing to continue on to the DP will be grounded in at least one additional language, and will have developed an inquiring, reflective approach to language learning [p5 - IB MYP Language Acquisition guide].

Students must be able to study at least:

- One additional language (or a second language from the Language and Literature subject group) sustained across the entire year in each year of the MYP.
- The same additional language in each year of the MYP, or achieve a satisfactory proficiency in phase 4 in order to transfer to another language. (It is up to each individual school to determine the grade deemed as satisfactory for the transfer to be approved.)

Grade 6 [French, German, Spanish, and Mandarin]

- full year required course
- meets every other day

This course lays the foundation for further study of the target language. Students will be exposed to the French, German, Hispanic or Mandarin culture and language making connections and comparisons with the English-speaking world. Basic vocabulary and grammar will be introduced through a variety of activities in the four skill areas of reading, writing, listening, and speaking. This course continues in 7th grade. **(Student must take the same language grades 6-10 per MYP Policy in order to receive the MYP Certificate.)**

Grade 7 [French, German, Spanish, & Mandarin]

- full year required course
- meets every other day
- equivalent to High School Language B Level 1 – Semester 1
- continues in 8th grade

Successful completion of 7th and 8th grade courses allows students to register for Language Acquisition Level 2 at Northville High School.

This course is designed to continue students' study of the target language begun in 6th grade. Students will have the opportunity to improve, reinforce, and use the skills already acquired in the previous year's study. More vocabulary and grammatical structures will be taught through reading, writing, listening, and speaking activities. Students will develop the ability to

communicate basic ideas about their personal world. **(Students must take the same language grades 6-10 per MYP Policy in order to receive the MYP Certificate.)**

Grade 8 or Level 1 [French, German, Spanish & Mandarin]

- full year required course
- meets every other day
- equivalent to High School Language B Level 1 - Semester 2
- continuation of 7th grade course
- 8th grade Language Acquisition course will be placed on high school transcript

Successful completion of 7th and 8th grade courses allows students to register for Language Acquisition Level 2 at Northville High School.

This course is designed to reinforce and expand students' communication skills in the areas of writing, reading, listening, and speaking. New vocabulary, grammatical structures, and cultural concepts are taught through a variety of activities. Students will continue to develop their ability to communicate personal ideas, feelings, and opinions that relate to real-life situations and scenarios. **(Students must take the same language grades 6-10 per MYP Policy in order to receive the MYP Certificate.)**

MATH

In the MYP, it is important that learners acquire mathematical understanding by constructing their own meaning through increasing levels of abstraction, starting with an exploration of their own personal experiences, understandings and knowledge. Additionally, it is fundamental to the philosophy of both programmes that, since it is to be used in real-life situations, mathematics needs to be taught in relevant, realistic contexts, rather than by attempting to impart a fixed body of knowledge. In both programmes, mathematics is valued not only for its beauty but also for its usefulness in helping us to understand how the world works and for providing us with a unique way to communicate. Mathematics is an essential tool for transdisciplinary and interdisciplinary inquiry. Teaching and learning experiences in the MYP challenge students to be curious, ask questions and explore and interact with the environment physically, socially and intellectually. Through engaging in this process, students are able to construct meaning about mathematics concepts, transfer this meaning to symbols and apply mathematical understanding in familiar and unfamiliar situations [p5 - IB MYP Mathematics guide].

Math 6

The foundation of this course is the Sixth Grade Common Core State Standards for Mathematical Content and Standards for Mathematical Practice. This course opens doors to abstract thought, reasoning, and inquiry as students persevere to master the content. Students will be exposed to highly motivating and relevant problems to challenge their mathematical understanding. This course will focus on five critical areas: (1) connecting ratio and rate to whole number multiplication and division and using concepts of ratio and rate to solve problems; (2) completing understanding of division of fractions and extending the notion of number to the system of rational numbers; (3) writing, interpreting, and using expressions and equations; (4) developing understanding of statistical thinking; and (5) reasoning about

relationships among shapes to determine area, surface area, and volume. This course builds mathematical understanding and supports student application of key mathematical concepts.

Advanced Math 6

The foundation of this course is the Sixth Grade Common Core State Standards for Mathematical Content and Standards for Mathematical Practice. This course curriculum incorporates grade level standards and pushes students to evidence their learning by applying their knowledge of key math concepts. When appropriate, standards are accelerated to further challenge students and their analytical skills. This course is for math precocious students who relish the rigor and pace of an honors level class. Students will be asked to understand mathematical practices and demonstrate knowledge of these practices by completing higher-level conceptual problems and performance tasks. Please visit our website, www.northvilleschools.org, for information on placement into higher level math courses.

Math 7

Students will gain a deeper understanding of math concepts by narrowing their focus to fewer topics. Mastery occurs through fun and engaging activities, stepped-out concise examples, and rich, thought-provoking exercises. This course will focus on four critical areas: (1) developing understanding of and applying proportional relationships; (2) developing understanding of operations with rational numbers and working with expressions and linear equations; (3) solving problems involving scale drawings and informal geometric constructions, and working with two/three-dimensional shapes to solve problems involving area, surface area, and volume; and (4) drawing inferences about populations based on samples. The overarching standards for mathematical practice are incorporated throughout the year. Visit <http://www.corestandards.org> for more information.

Advanced Math 7

This course covers a portion of the Common Core State Standards for seventh grade as well as the eighth grade standards. The overarching standards for mathematical practice are incorporated throughout the year. The curriculum moves at a brisk pace and students are also asked for deeper levels of application and conceptual understanding as well as reflective reasoning. Students will leave this course ready to begin Honors Algebra 1 in the eighth grade. Visit <http://www.corestandards.org> for more information.

Math 8

This course will focus on three critical areas: (1) formulating and reasoning about expressions and equations, including modeling an association in bivariate data with linear equations, and solving linear equations and systems of linear equations; (2) grasping the concept of a function and using functions to describe quantitative relationships; (3) analyzing two/three-dimensional space and figures using distance, angle, similarity, and congruence, and understanding and applying the Pythagorean Theorem. The overarching standards for mathematical practice are incorporated throughout the year. Visit <http://www.corestandards.org/> for more information.

Algebra 1 (Honors Math 8)

This course is designed for the student who experienced success in previous years and who

learns math at an above-average rate. The first semester of this course will focus on linear functions and equations and their use in examining relationships that change at a constant rate such as cost per item purchased. Students will write, graph and solve linear equations and inequalities as well as systems of equations and inequalities. The second semester will focus on properties of nonlinear functions (i.e. quadratics, exponential functions, etc.) and their use in examining relationships like those between money and time, height and velocity. Students who successfully complete one year of Algebra I will be prepared to enroll in Geometry the following school year. This course will be placed on the student's high school transcript upon completion.

Honors Geometry

This course satisfies the Geometry requirement established by the State of Michigan. It is based on the Common Core State Standards and the Standards for Mathematical Practices with an emphasis on the IB Learner Profile. This is a rigorous course designed for highly motivated math students who perform at a high level of accuracy and are able to grasp mathematical concepts easily. The content of this course will include: number reasoning, vectors, unit conversion, inductive and deductive reasoning, logical arguments, language and Laws of Logic, special properties of triangles, basic Euclidean geometry, coordinate geometry, trigonometry, polygons, special quadrilaterals, arc and angles of circles, perimeter, surface area, volume, congruence and similarity of triangles, spatial geometry, transformations and geometric probability. Students will be expected to draw geometric constructions and write various types of proofs. Students who successfully complete one year of Honors Geometry will take Honors Algebra 2 as their next course.

PHYSICAL AND HEALTH EDUCATION

MYP Physical and Health Education aims to empower students to understand and appreciate the value of being physically active and develop the motivation for making healthy life choices. To this end, physical and health education courses foster the development of knowledge, skills and attitudes that will contribute to a student's balanced and healthy lifestyle. Through opportunities for active learning, courses in this subject group embody and promote the holistic nature of well-being. Students engaged in physical and health education will explore a variety of concepts that help foster an awareness of physical development and health perspectives, empowering them to make informed decisions and promoting positive social interaction. [p4 - IB MYP Physical and Health Education guide]

Physical Education 6

Students will develop skills that will assist in a lifelong interest in and enjoyment of physical activities as a participant. Students will perform a daily routine of stretching, aerobic/anaerobic exercises and sport unit lessons. Units will include team and individual sports, health-related fitness activities as well as a standardized fitness test. Lessons within these units will teach the appropriate motor skills and basic strategies for the various sports. The fitness test unit will be effort-based and focus on performing the tests in accordance with the standards. Results will be compared to the criterion-based standards at the end of the year. Students will be assessed on the following areas: motor skills performance, cognitive knowledge of sport and using physical education terminology in context. The student will also

be assessed on behavior, effort, attitude, sportsmanship and responsibility. Students will be introduced to the various aspects of a sports unit such as video lesson, skill work, game play with team and cognitive and skill testing. Units include Fitness testing, Health-related fitness activities: Frisbee, Flag Football, Lacrosse, Volleyball, Soccer, Team Handball, Bowling, Badminton, Basketball, Floor Hockey, Track and Field, Softball, Kickball, and Frisbee Golf. Students will be open-minded to explore new activities. Students will also learn how to analyze and explain game-related strategies.

Physical Education 7

Students will develop skills that will assist in a lifelong interest in and enjoyment of physical activities as a participant. Students will perform a daily routine of stretching, aerobic/anaerobic exercises and sport unit lessons. Units will include team and individual sports, health-related fitness activities as well as a standardized fitness test. Lessons within these units will focus on skill refinement and personal improvement of the appropriate motor skills and build on basic strategies for the various sports. The fitness test unit will be standard driven with improvement as a focus. Students will compare their best scores to the criterion-based standards at the end of the year. Students will be assessed on the following areas: motor skills performance, cognitive knowledge of sport and using physical education terminology in context. The student will also be assessed on behavior, effort, attitude, sportsmanship and responsibility. Units include Fitness testing, Health-related fitness activities: Frisbee, Flag Football, Lacrosse, Volleyball, Soccer, Team Handball, Bowling, Badminton, Basketball, Floor Hockey, Track and Field, Softball, Kickball, and Frisbee Golf. Students will be able to access prior knowledge of skills and games. Students will be introduced to ways of communication during games and activities with other students.

Physical Education 8

Students will develop skills that will assist in a lifelong interest in and enjoyment of physical activities as a participant. Students will perform a daily routine of stretching, aerobic/anaerobic exercises and sport unit lessons. Units will include team and individual sports, health-related fitness activities as well as a standardized fitness test. Lessons within these units will focus on further skill refinement and personal improvement of the appropriate motor skills, strategy acquisition and team role for the various sports. The fitness test unit will be standard driven with individual goals being a focus. Students will be assessed on the following areas: motor skills performance, cognitive knowledge of sport and using physical education terminology in context. The student will also be assessed on behavior, effort, attitude, sportsmanship and responsibility. Units include Fitness testing, Health-related fitness activities: Frisbee, Flag Football, Lacrosse, Volleyball, Soccer, Team Handball, Bowling, Badminton, Basketball, Floor Hockey, Track and Field, Softball, Kickball, and Frisbee Golf. Students will learn how to analyze and explain game-related strategies.

SCIENCE

With inquiry at the core, the MYP sciences framework aims to guide students to independently and collaboratively investigate issues through research, observation and experimentation. The MYP sciences curriculum must explore the connections between

science and everyday life. As they investigate real examples of science applications, students will discover the tensions and dependencies between science and morality, ethics, culture, economics, politics, and the environment. [p3 - IB MYP Science guide]

Science 6

The curriculum is one that will allow students to think critically as inquirers, while working in a hands-on, minds-on fashion to connect science to their daily lives through activity-oriented instruction. Students will become interested and engaged in the role of science in their world. Science is integrated and aligned to the Next Generation Science Standards (NGSS). Students will cover life science, earth science, physical science and engineering concepts.

Science 7

Students will work collaboratively with their peers to develop investigative skills which will allow them to carry out scientific experiments, evaluate evidence, and draw a conclusion. Students will acquire skills to use scientific tools including microscopes, triple-beam balances, and weather instruments to collect information during investigations. Finally, students will complete research projects to develop their awareness of ethical, social, cultural and environmental implications of the practice and use of science and technology. Science is integrated and aligned to the Next Generation Science Standards (NGSS). Students will develop scientific knowledge and understanding in the following areas of science: life science, earth science, physical science and engineering concepts.

Science 8

The 8th grade science program encourages students to become open-minded, inquiring, caring, life-long learners. The course emphasizes problem-solving skills, hands-on activities, and opportunities for critical thinking and analysis. Throughout, students are frequently asked to conduct experiments, collect data, and analyze their data. Science is integrated and aligned to the Next Generation Science Standards (NGSS). Students will cover life science, earth science, physical science and engineering concepts.

DESIGN CYCLE

Design, and the resultant development of new technologies, has given rise to profound changes in society: transforming how we access and process information, how we adapt our environment, how we communicate with others, how we are able to solve problems, and how we work and live. Design is the link between innovation and creativity, taking thoughts and exploring the possibilities and constraints associated with products or systems, allowing them to redefine and manage the generation of further thought through prototyping, experimentation and adaptation. It is human-centred and focuses on the needs, wants and limitations of the end user. [p4 - IB MYP Design guide]

Digital Journey 6 – Full Year Every Other Day

Students will use productivity applications to cover the Michigan Department of Education's educational technology standards and expectations for middle school students. No prior experience is required. Students in this course will survey word processing, spreadsheets, databases, and presentations through projects like Entrepreneur where students gain respect

for others and an appreciation of similarities and differences through planning a restaurant and incorporating the IB Design Cycle: investigate, plan, design, create and evaluate. Students will also address digital citizenship and responsible use practices to create an awareness of global issues and a willingness to act responsibly. Students will also develop and review fundamental keyboarding skills.

Digital Journey 7 – Full Year Every Other Day

Students increase their knowledge and skills of word processing, spreadsheets and presentations through projects like an electronic magazine called an E-zine. Students learn to make their publication interactive by bookmarking locations and creating hyperlinks which will engage in effective communication across frontiers. Students will also apply skills learned in Digital Journey 6 to create easy-to-read financial information of a company and demonstrate understanding by entering sales revenue into a worksheet and formatting it to look professional. Students will use the IB Design Cycle to investigate, plan, design, create and evaluate multimedia presentations like a travel advertisement.

Lastly, students will become “Video Game Designers” and use 21st century skills such as systems thinking, problem-solving, creativity, collaboration, digital media literacies and a motivation for STEAM (Science, Technology, Engineering, Art and Math) learning to make and share their own video games. Students will go on epic quests and earn powerful sprites. Once they earn their tools through Gamification, students design their very own video games!

Digital Journey 8 – Full Year Every Other Day

Students become media savvy in this class. Students analyze the content of commercials to understand marketing techniques used to sell goods to consumers. Once armed with marketing information, students team-up to investigate, plan, design, create and evaluate their own commercial through the Design Cycle. Students will use movie editing software to enhance their commercial. Students may create various media-rich projects such as stop-animation, movie trailers or animated previews of a book enticing people to become active, compassionate and lifelong learners. Students will also learn how to create and publish a website. They will utilize the Design Cycle, internet-searching and digital images to incorporate into their project. The integration of the IB Design Cycle in Digital Journey 8 coursework prepares students with project management skills to successfully create their own personal projects in Year 5 (10th Grade) of the MYP.

Career and Technology Education 7 – Full Year Every Other Day

Students are introduced to career opportunities available as described in the 16 Career Clusters and explore their career interests by creating their own animation of a career cluster while learning about time management, organization and problem solving. Next, students explore their digital life and how their footprint will leave a lasting impression. Students will also become “Mythbusters” by creating and editing digital images to bust a science myth. Lastly, students will work collaboratively to design their own Mobile App!

Career and Technology Education 8 – Full Year Every Other Day

In this class, students will explore areas of careers for their future while also learning valuable skills needed for the 21st century. Students will investigate careers in-depth, design a digital portfolio and a video resume. Innovative tools will be used to investigate colleges and create

powerful presentations. Students will be introduced to basic money management skills needed for making future decisions. Lastly, students will become cartoonists and screencasters through digital storytelling apps and/or sites.

Project Lead the Way (PLTW)

In 6th grade PLTW is embedded into Academic Resource and Enrichment.

PLTW Gateway provides engineering and biomedical science curriculum for middle school students that challenges, inspires, and offers school's variety and flexibility. Students get rigorous and relevant experiences through activity-, project-, and problem-based learning. They use industry-leading technology to solve problems while gaining skills in communication, collaboration, critical-thinking, and creativity.

Design and Modeling (6th grade)

In Design and Modeling students apply the design process to solve problems and understand the influence of creativity and innovation in their lives. They work in teams to design a playground and furniture, capturing research and ideas in their engineering notebooks. Using Autodesk® design software, students create a virtual image of their designs and produce a portfolio to showcase their innovative solutions.

Science of Technology (6th grade)

In Science of Technology students apply the concepts of physics, chemistry, and nanotechnology to STEAM activities and projects, including making ice cream, cleaning up an oil spill, and building roller coasters.

Medical Detectives and Flight and Space

In Medical Detectives students play the role of real-life medical detective as they analyze genetic testing results to diagnose disease and study DNA evidence found at a "crime scene." They solve medical mysteries through hands-on projects and labs, investigate how to measure and interpret vital signs, and learn how the systems of the human body work together to maintain health.

In Flight and Space an exciting world of aerospace comes alive through the properties of STEAM. Students explore the science behind aeronautics and use their knowledge to design, build and test different types of rockets and flying machines such as kites, hot air balloons, and gliders. Students use these futuristic flying machines to create an infomercial to promote their innovative creations. Custom-built simulation software allows students to experience space travel.

Robotics and Automation and Magic of Electrons

Magic of Electrons will be taught through hands-on projects; students explore the science of electricity, the behavior and parts of atoms, circuit design, and sensing devices. Students acquire knowledge and skills in basic circuitry design and explore the impact of electricity on our lives. Students will do multiple hands-on activities that include the creation of a DC Motor and soldering a nightlight. In Robotics and Automation students will trace the history, development, and influence of automation and robotics. They learn about mechanical systems, energy transfer, machine automation and computer control systems. Students use

a robust robotics platform to design, build, and program a solution to solve an existing problem.